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10/820,636	04/08/2004	Sridhar Ranganathan	17872 (27839-2268)	8821
45736 7590 09/22/2009 Christopher M. Goff (27839) ARMSTRONG TEASDALE LLP ONE METROPOLITAN SQUARE SUITE 2600 ST. LOUIS, MO 63102				
EXAMINER				
HAND, MELANIE JO				
ART UNIT		PAPER NUMBER		
3761				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary

Application No.

10/820,636

Applicant(s)

RANGANATHAN ET AL.

Examiner

MELANIE J. HAND

Art Unit

3761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7-15,17-22,24-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7-15,17-22,24-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed June 8, 2009 have been fully considered but they are not persuasive. As to the argument that no grounds of rejection were presented for claims 27 and 37, applicant is referred to page 21 of the previous Office action where such grounds of rejection is present. As to the argument regarding claims 1, and 41-43 that the article of Suzuki, especially as depicted in Fig. 10 of Suzuki, does not lie flat in a dry state, it is examiner's position that, though there may be leakage preventing walls present that are folded, they are folded over the top of the article so as to form a planar article, i.e. the article lies flat. It is examiner's position that it is clear from Fig. 10 of Suzuki that the article with the folded walls is planar and thus lies flat in a dry state. Applicant clearly concurs with the examiner's position that a planar structure is equivalent in meaning to "lying flat" as applicant equates the two concepts in the Remarks on page 16.
2. As to arguments regarding claims 17 and 30, Suzuki discloses in paragraph 0001 that the absorbent structure is for use in a diaper. A bodyside liner and outer cover, wherein the absorbent structure is placed therebetween such that the first layer of the absorbent structure is adjacent the bodyside liner and the second layer of the structure is adjacent an outer cover is a diaper configuration that was well-known in the art at the time the Suzuki invention was made and at the time applicant's invention was made. Therefore, by disclosing that the structure is for use in a diaper, Suzuki certainly fairly suggests a first layer of the structure adjacent a bodyside liner and a second layer of the structure adjacent an outer cover. As to the limitation "second surface increases concavity", the second layer of Suzuki meets the claim limitations as to a second layer that expands at least 20% in the presence of liquid. As to the argument that Suzuki

teaches away from the invention of claim 17 because the layer that expands more is the layer P that would face a body-side liner. While it is true that layer P is the layer which expands more, examiner did not find any distinction in the Suzuki specification or drawings dictating which side of the article the structure is placed in would face a bodyside liner and which would face an outer cover. Suzuki merely discloses a sheet P and a sheet Q, does not indicate either sheet in the drawings and, from the drawings showing the absorbent structure, the layer that expands more to form the side leak barrier is clearly the layer that would face an outer cover and expands to form an absorbent structure identical in shape to that claimed by applicant. With regard to claim 30, reciting that the first layer increases concavity rather than the second, the article of Suzuki still meets the claims because the layer or surface that expands more and increases concavity is bonded to the outer cover in both claims. As stated *supra*, it is clear from the drawings that this configuration is also what is taught by Suzuki.

Claim Rejections - 35 USC § 103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 1, 3, 9, 13-15 and 41 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Suzuki et al (JP 2003-033381 (English translation)).

With respect to **claim 1**: Suzuki teaches a single layer absorbent structure, comprising: a first surface opposite a second surface, wherein the single-layer absorbent structure expands along the second surface defined by component sheet P in the presence of a liquid so that the first surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the single-layer absorbent structure expands to a lesser extent along the first surface (i.e. the inwardly facing surface of component sheet Q) than the single-layer absorbent structure expands along the second surface (i.e. the outwardly facing, concave surface of component sheet P having the larger curvature radius) in the presence of the liquid. As seen in Fig. 10 of Suzuki, the single layer structure is shown prior to expansion, i.e. in a dry state and is considered herein to lie flat in said dry state. With regard to the limitation "the single-layer absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater", the single layer structure taught by Suzuki comprises a spunbond film (sheet Q) with superabsorbent (sheet P), thus Suzuki teaches substantially identical materials for the instant

single layer absorbent structure. The property of fluid Intake Rate is considered herein to be an inherent property of the materials used. When the structure or composition recited in the reference is substantially identical to that of the claimed invention, claimed properties or functions are presumed to be inherent. See MPEP §2112-2112.01. A prima facie case of either anticipation or obviousness has been established when the reference discloses all of the limitations of a claim except for a property or function and the examiner cannot determine whether or not the reference inherently possesses properties that anticipate or render obvious the claimed invention but has a basis for shifting the burden of proof to the applicant. See *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980). The single-layer absorbent structure of Suzuki has a thickness of about 2 mm in a dry state, which falls within the claimed range of about 1 to about 10 millimeters in a dry state. (¶¶0008-0021,0035)

With respect to **claim 3**: The single-layer absorbent structure disclosed by Suzuki comprises spunbond film (sheet Q) with superabsorbents (sheet P).

With respect to **claim 9**: With regard to the limitation "the absorbent structure has a basis weight between about 50 and about 1000 grams per square meter", the single layer structure taught by Suzuki comprises a spunbond film (sheet Q) with superabsorbent (sheet P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The basis weight of the claimed structure is considered herein to be an inherent property of the materials used to make the structure. When the structure or composition recited in the reference is substantially identical to that of the claimed invention, claimed properties or functions are presumed to be inherent. See MPEP §2112-2112.01. A prima facie case of either anticipation or obviousness has been established when the reference discloses all of the limitations of a claim

except for a property or function and the examiner cannot determine whether or not the reference inherently possesses properties that anticipate or render obvious the claimed invention but has a basis for shifting the burden of proof to the applicant. See *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980). The single-layer absorbent structure of Suzuki has a thickness of about 2 mm in a dry state, which falls within the claimed range of about 1 to about 10 millimeters in a dry state.

With respect to **claim 13**: Suzuki teaches that the first surface defined by sheet Q expands less than the second surface defined by sheet P, thus the second surface comprises at least one region of reduced expansion. The term "region" is given its broadest reasonable interpretation herein, thus encompassing embodiments in which the region has an area less than or equal to the area of the first surface.

With respect to **claim 14**: The at least one region of reduced expansion of sheet Q has been modified by adhesion junctions, i.e. adhesive bonding that bonds sheet P to sheet Q.

With respect to **claim 15**: The second surface defined by sheet P undergoes anisotropic expansion in the presence of a liquid inasmuch as the expansion in the vertical "Z" direction perpendicular to the plane of the article, is greater than the expansion in the x-y plane of the article.

With respect to **claim 41**: Suzuki teaches a single layer absorbent structure, comprising: a first surface opposite a second surface, wherein the single-layer absorbent structure expands along the second surface defined by component sheet P in the presence of a liquid so that the first

surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid. The single-layer absorbent structure expands to a lesser extent along the first surface (i.e. the outwardly facing surface of component sheet Q) than the single-layer absorbent structure expands along the second surface (i.e. the outwardly facing, concave surface of component sheet P having the larger curvature radius) in the presence of the liquid. As seen in Fig. 10 of Suzuki, the single layer structure is shown prior to expansion, i.e. in a dry state and is considered herein to lie flat in said dry state. With regard to the limitation "the single-layer absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater", the single layer structure taught by Suzuki comprises a spunbond film (sheet Q) with superabsorbent (sheet P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The property of fluid Intake Rate is considered herein to be an inherent property of the materials used. When the structure or composition recited in the reference is substantially identical to that of the claimed invention, claimed properties or functions are presumed to be inherent. See MPEP §2112-2112.01. A prima facie case of either anticipation or obviousness has been established when the reference discloses all of the limitations of a claim except for a property or function and the examiner cannot determine whether or not the reference inherently possesses properties that anticipate or render obvious the claimed invention but has a basis for shifting the burden of proof to the applicant. See *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980). The second surface defined by sheet P undergoes anisotropic expansion in the presence of a liquid inasmuch as the expansion in the vertical "Z" direction perpendicular to the plane of the article, is greater than the expansion in the x-y plane of the article. (¶¶0008-0021,0035)

Claim Rejections - 35 USC § 103

7. Claims 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki ('381).

With respect to **claim 7**: The absorbent structure of Suzuki expands to a thickness of at least 7 mm, derived from a 2mm thickness in dry state plus a "level difference" of 5 mm or more, wherein level difference is interpreted herein as any additional thickness imparted as a result of swelling. Suzuki does not teach a width of the article, which dictates the subtended angle along with the thickness, however since Suzuki teaches identical materials for the single layer structure, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki so as to arrive at the claimed subtended angle of about 30 degrees to about 180 degrees in the presence of a liquid by modifying the width of the article. Suzuki also teaches that the level difference functions as a guard bank, interpreted herein as a guard against leakage. Thus the subtended angle is considered herein to be a result-effective variable. It has been held that discovery of an optimum value of a result effective variable in a known process is ordinarily within skill of art. *In re Boesch and Stanley*, 205 USPQ 215 (C.C.P.A. 1980)

With respect to **claim 8**: Suzuki does not explicitly teach that the absorbent structure has a radius of curvature of about 38 centimeters or less in the presence of a liquid. However since Suzuki teaches identical materials for the single layer structure, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki so as to arrive at the claimed radius of curvature of about 38 centimeters or less in the presence of a liquid by modifying the width of the article, which in turn modifies the associated subtended angle and radius of curvature. Suzuki also teaches that the level difference (and thus the associated subtended angle and

radius of curvature) provides a guard bank, interpreted herein as a guard against leakage, wherein level difference is interpreted herein as any additional thickness imparted as a result of swelling. Thus the radius of curvature is also considered herein to be a result-effective variable. It has been held that discovery of an optimum value of a result effective variable in a known process is ordinarily within skill of art. *In re Boesch and Staney*, 205 USPQ 215 (C.C.P.A. 1980)

With respect to **claim 10**: Suzuki teaches that the first surface defined by sheet Q is hydrophobic and thus naturally expands less in the presence of a liquid. However, since a hydrophilic sheet treated to become hydrophobic and expand less in the presence of liquid is equivalent to a naturally hydrophobic sheet and provides an identical end product. Since Suzuki teaches hydrophilic sheets that swell for sheet Q as well as hydrophobic sheets, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that the first surface is defined by a hydrophilic sheet Q treated to expand less in the presence of a liquid relative to the extent to which the second surface defined by sheet P expands in the presence of a liquid with a reasonable expectation of success to provide a first hydrophobic surface that expands less than the second surface as claimed

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al ('381) in view of Carlucci et al (EP 804915 A1).

With respect to **claim 11**: Suzuki does not teach that the first surface is treated by any of the processes set forth in claim 11. Carlucci teaches a single layer absorbent structure having a first surface that expands less than the second surface due to aperturing. Since the article of Suzuki and Carlucci seek to solve a similar problem in the art, it would be obvious to one of ordinary

skill in the art to modify the article of Suzuki such that the first surface expands less than the second surface via treatment comprising aperturing as taught by Carlucci with a reasonable expectation of success.

With respect to **claim 12**: Suzuki does not teach that at least one of the first and second surfaces comprises at least one slit to control shaping. Carlucci teaches a first surface that comprises apertures but does not explicitly teach that at least one of the first and second surfaces comprises at least one slit. However, since Carlucci teaches that the apertures may have non-circular shapes and have various dimensions, it would be obvious to one of ordinary skill in the art to modify the structure of Carlucci so as to have apertures in the form of at least one slit with a reasonable expectation of success. The recitation "to control shaping" constitutes functional language that is given little patentable weight herein. (Figs. 4b,c, Col. 9, lines 46-55)

9. Claims 17-22, 24-26, 28-36, 38-40 and 42-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al ('381) in view of Hamilton et al (U.S. Patent No. 6,667,424).

With respect to **claim 17**: Suzuki teaches an absorbent structure, comprising: a first layer Q that expands less than 10% in the presence of a liquid; and an absorbent second layer P bonded to the first layer Q, wherein the absorbent second layer expands by 5 mm or more which is at least 20% of its original thickness, in the presence of the liquid so that the second layer P increases concavity, wherein a pocket-like shape is formed along an interface of the first and second layers Q,P respectively, in the presence of the liquid.

Suzuki discloses that second layer P is an absorber layer and comprises cotton, but does not disclose that it comprises polyurethane foam. Hamilton discloses that both cotton and polyurethane foam are materials known to be used in absorbent articles. ('424, Col. 27, line 60 – Col. 28, line 8) Therefore it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that second layer P comprises polyurethane foam with a reasonable expectation of success to ensure that the material is suitable for the purpose of absorbing liquid.

With regard to the limitation “the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater”, the absorbent structure taught by Suzuki as modified by comprises a spunbond film (first layer Q) with polyurethane foam (second layer P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The property of fluid Intake Rate is considered herein to be an inherent property of the materials used. Therefore, although neither Suzuki nor Hamilton explicitly discloses a fluid intake range, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to possess a fluid intake rate within the claimed range with a reasonable expectation of success.

With regard to the limitation “the absorbent structure has a basis weight between about 100 and about 1000 grams per square meter”, the single layer structure taught by Suzuki as modified by Hamilton comprises a spunbond film (sheet Q) with polyurethane foam (sheet P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The basis weight of the claimed structure is considered herein to be an inherent property of the materials used to make the structure. Therefore, although neither Suzuki nor Hamilton explicitly discloses a basis weight for the materials disclosed that meet the claim limitations, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as

modified by Hamilton so as to possess a basis weight within the claimed range with a reasonable expectation of success.

Suzuki discloses in paragraph 0001 that the absorbent structure is for use in a diaper. A bodyside liner and outer cover, wherein the absorbent structure is placed therebetween such that the first layer of the absorbent structure is adjacent the bodyside liner and the second layer of the structure is adjacent an outer cover is a diaper configuration that was well-known in the art at the time the Suzuki invention was made and at the time applicant's invention was made. Therefore, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that the absorbent structure is positioned between a bodyside liner and an outer cover with a reasonable expectation of success to provide an article for absorbing bodily exudate. The article suggested by Suzuki thus comprises a first layer of the structure positioned adjacent a bodyside liner and a second layer of the structure is positioned adjacent an outer cover.

With respect to **claim 18**: The absorbent structure of Suzuki expands to a thickness of at least 7 mm, derived from a 2mm thickness in dry state plus a "level difference" of 5 mm or more, wherein level difference is interpreted herein as any additional thickness imparted as a result of swelling. Suzuki does not teach a width of the article, which dictates the subtended angle along with the thickness. However since the article of Suzuki as modified by Hamilton contains identical materials for the single layer structure to those disclosed by applicant (see the rejection of claim 17). Suzuki also teaches that the level difference functions as a guard bank, interpreted herein as a guard against leakage. Thus the subtended angle is considered herein to be a result-effective variable. It has been held that discovery of an optimum value of a result effective variable in a known process is ordinarily within skill of art. *In re Boesch and Slaney*, 205 USPQ 215 (C.C.P.A. 1980) it would be obvious to one of ordinary skill in the art to modify the article of

Suzuki as modified by Hamilton so as to arrive at the claimed subtended angle of about 30 degrees to about 180 degrees in the presence of a liquid by modifying the width of the article.

With respect to **claim 19**: Suzuki does not explicitly teach that the absorbent structure has a radius of curvature of about 38 centimeters or less in the presence of a liquid. Hamilton also does not disclose a radius of curvature. However the single layer article of Suzuki as modified by Hamilton teaches identical materials to those disclosed by applicant. Suzuki also teaches that the level difference (and thus the associated subtended angle and radius of curvature) provides a guard bank, interpreted herein as a guard against leakage, wherein level difference is interpreted herein as any additional thickness imparted as a result of swelling. Thus the radius of curvature is also considered herein to be a result-effective variable. It has been held that discovery of an optimum value of a result effective variable in a known process is ordinarily within skill of art. *In re Boesch and Slaney*, 205 USPQ 215 (C.C.P.A. 1980) It would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to arrive at the claimed radius of curvature of about 38 centimeters or less in the presence of a liquid by modifying the width of the article, which in turn modifies the associated subtended angle and radius of curvature.

With respect to **claim 20**: The single-layer absorbent structure of Suzuki has a thickness of about 2 mm in a dry state, which falls within the claimed range of about 1 to about 10 millimeters in a dry state.

With respect to **claim 21**: The second layer of the article of Suzuki as modified by Hamilton is

comprised of polyurethane foam, which is elastomeric inasmuch as polyurethane is itself elastomeric.

With respect to **claim 22**: With regard to the limitation “the absorbent structure has a basis weight between about 100 and about 1000 grams per square meter”, the single layer structure taught by Suzuki as modified by Hamilton comprises a spunbond film (sheet Q) with polyurethane foam (sheet P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The basis weight of the claimed structure is considered herein to be an inherent property of the materials used to make the structure. Therefore, although neither Suzuki nor Hamilton explicitly discloses a basis weight for the materials disclosed that meet the claim limitations, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to possess a basis weight within the claimed range with a reasonable expectation of success.

With respect to **claim 24**: The first layer Q disclosed by Suzuki comprises a spunbond material.

With respect to **claim 25**: The absorbent second layer of the article of Suzuki as modified by Hamilton comprises polyurethane foam, i.e. a thermoplastic foam. The motivation to modify the article of Suzuki such that the second layer comprises polyurethane foam is stated *supra* with respect to claim 17.

With respect to **claim 26**: The absorbent second layer P disclosed by Suzuki comprises a superabsorbent material.

With respect to **claim 28**: Suzuki teaches that the first surface defined by sheet Q expands less than the second surface defined by sheet P, thus the second surface comprises at least one region of reduced expansion. The term "region" is given its broadest reasonable interpretation herein, thus encompassing embodiments in which the region has an area less than or equal to the area of the first surface.

With respect to **claim 29**: The at least one region of reduced expansion of sheet Q disclosed by Suzuki has been modified by adhesion junctions, i.e. adhesive bonding that bonds sheet P to sheet Q.

With respect to **claim 30**: Suzuki teaches an absorbent structure comprising an absorbent article wherein the absorbent structure includes a first surface opposite a second surface, the absorbent structure expands along the second surface defined by the outward facing surface of sheet P in the presence of a liquid so that the first surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid. The absorbent structure expands to a lesser extent along the first surface defined by an outward facing surface of sheet Q than the absorbent structure expands along the second surface in the presence of the liquid due to the hydrophobicity of the sheet Q and thus the first surface.

Suzuki discloses that second layer P is an absorber layer and comprises cotton, but does not disclose that it comprises polyurethane foam. Hamilton discloses that both cotton and polyurethane foam are materials known to be used in absorbent articles. ('424, Col. 27, line 60 – Col. 28, line 8) Therefore it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that second layer P comprises polyurethane foam as disclosed by

Hamilton with a reasonable expectation of success to ensure that the material is suitable for the purpose of absorbing liquid.

With regard to the limitation "the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater", the absorbent structure taught by Suzuki as modified by comprises a spunbond film (first layer Q) with polyurethane foam (second layer P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The property of fluid Intake Rate is considered herein to be an inherent property of the materials used. Therefore, although neither Suzuki nor Hamilton explicitly discloses a fluid intake range, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to possess a fluid intake rate within the claimed range with a reasonable expectation of success.

With regard to the limitation "the absorbent structure has a basis weight between about 50 and about 1000 grams per square meter", the single layer structure taught by Suzuki as modified by Hamilton comprises a spunbond film (sheet Q) with polyurethane foam (sheet P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The basis weight of the claimed structure is considered herein to be an inherent property of the materials used to make the structure. Therefore, although neither Suzuki nor Hamilton explicitly discloses a basis weight for the materials disclosed that meet the claim limitations, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to possess a basis weight within the claimed range with a reasonable expectation of success.

Suzuki does not teach an absorbent article comprising a body side liner or an outer cover. Hamilton discloses an absorbent article comprising a body side liner and outer cover. Suzuki teaches an absorbent structure that functions as an absorbent body, as do the

polyurethane foam absorbent layers disclosed by Hamilton. Such absorbent articles containing an outer cover, a body side liner and an absorbent article such as that taught by Suzuki and Hamilton positioned between the body side liner and the outer cover and bonded to one or both are well known in the art, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki so as to have an outer cover and a body side liner as disclosed by Hamilton with a reasonable expectation of success to provide a thin yet sufficiently absorbent article.

With respect to **claim 31**: The absorbent structure of Suzuki comprises a single layer of absorbent material in the form of a laminate of sheets P and Q.

With respect to **claim 32**: The single-layer absorbent structure disclosed by Suzuki comprises spunbond film (sheet Q) with superabsorbents (sheet P).

With respect to **claim 33**: The first surface disclosed by Suzuki is a surface of a first layer Q and the second surface is a surface of an absorbent second layer P that is bonded to the first layer Q. The second layer P expands in the presence of a liquid and increases concavity toward the first layer Q along an interface of the first and second layers in the presence of a liquid, and the first layer Q expands to a lesser extent than the second layer expands in the presence of a liquid.

With respect to **claim 34**: The first layer Q disclosed by Suzuki comprises a spunbond material.

With respect to **claim 35**: The absorbent second layer P disclosed by Suzuki comprises a superabsorbent film.

With respect to **claim 36**: Suzuki teaches that the first surface defined by sheet Q is hydrophobic and thus naturally expands less in the presence of a liquid. Suzuki does not teach that the first surface is treated. However, since a hydrophilic sheet treated to become hydrophobic and expand less in the presence of liquid is equivalent to a naturally hydrophobic sheet and provides an identical end product. Since Suzuki teaches hydrophilic sheets that swell for sheet Q as well as hydrophobic sheets, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that the first surface is defined by a hydrophilic sheet Q treated to expand less in the presence of a liquid relative to the extent to which the second surface defined by sheet P expands in the presence of a liquid with a reasonable expectation of success to provide a first hydrophobic surface that expands less than the second surface as claimed.

With respect to **claim 38**: Suzuki teaches that the absorbent second layer expands by 5 mm or more which is at least 20% of its original thickness, in the presence of the liquid

With respect to **claim 39**: The limitation of claim 39 is directed to an intended use of the instant article and thus bears little patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. The prior art structure of Suzuki as modified by Hamilton is capable of performing the intended use, therefore it meets the claim.

With respect to **claim 40**: The limitation of claim 39 is directed to an intended use of the instant

article and thus bears little patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. The prior art structure of Suzuki as modified by Hamilton is capable of performing the intended use, therefore it meets the claim.

With respect to **claim 42**: Suzuki teaches an absorbent structure, comprising: a first layer Q that expands less than 10% in the presence of a liquid; and an absorbent second layer P bonded to the first layer Q, wherein the absorbent second layer expands by 5 mm or more which is at least 20% of its original thickness, in the presence of the liquid so that the second layer P increases concavity, wherein a pocket-like shape is formed along an interface of the first and second layers Q,P respectively, in the presence of the liquid. As seen in Fig. 10 of Suzuki, the single layer structure is shown prior to expansion, i.e. in a dry state and is considered herein to lie flat in said dry state inasmuch as it defines a planar article.

Suzuki discloses that second layer P is an absorber layer and comprises cotton, but does not disclose that it comprises polyurethane foam. Hamilton discloses that both cotton and polyurethane foam are materials known to be used in absorbent articles. ('424, Col. 27, line 60 – Col. 28, line 8) Therefore it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that second layer P comprises polyurethane foam as disclosed by Hamilton with a reasonable expectation of success to ensure that the material is suitable for the purpose of absorbing liquid.

With regard to the limitation "the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater", the absorbent structure taught by Suzuki as modified by comprises a spunbond film (first layer Q) with polyurethane foam (second layer P), thus

Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The property of fluid Intake Rate is considered herein to be an inherent property of the materials used. Therefore, although neither Suzuki nor Hamilton explicitly discloses a fluid intake range, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to possess a fluid intake rate within the claimed range with a reasonable expectation of success.

With regard to the limitation "the absorbent structure has a basis weight between about 10 and about 150 grams per square meter", the single layer structure taught by Suzuki as modified by Hamilton comprises a spunbond film (sheet Q) with polyurethane foam (sheet P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The basis weight of the claimed structure is considered herein to be an inherent property of the materials used to make the structure. Therefore, although neither Suzuki nor Hamilton explicitly discloses a basis weight for the materials disclosed that meet the claim limitations, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton so as to possess a basis weight within the claimed range with a reasonable expectation of success.

With regard to the limitation "measured using the fluid intake rate test", the test method recited in the claim *per se* does not substantially affect the value of a specific parameter, which is a characteristic of the material and depends on the structure and make up of a material, but not on the method of its determination. Since the test method does not essentially affect the single layer structure during testing, the test method bears little patentable weight because any test method will yield substantially identical results, and thus the test method used cannot be the basis for patentability over the prior art.

With respect to **claim 43**: Suzuki teaches an absorbent structure, comprising: a first layer Q that expands less than 10% in the presence of a liquid; and an absorbent second layer P bonded to the first layer Q, wherein the absorbent second layer expands by 5 mm or more which is at least 20% of its original thickness, in the presence of the liquid so that the second layer P increases concavity, wherein a pocket-like shape is formed along an interface of the first and second layers Q,P respectively, in the presence of the liquid. As seen in Fig. 10 of Suzuki, the single layer structure is shown prior to expansion, i.e. in a dry state and is considered herein to lie flat in said dry state inasmuch as it defines a planar article.

Suzuki discloses that second layer P is an absorber layer and comprises cotton, but does not disclose that it comprises polyurethane foam. Hamilton discloses that both cotton and polyurethane foam are materials known to be used in absorbent articles. ('424, Col. 27, line 60 – Col. 28, line 8) Therefore it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that second layer P comprises polyurethane foam as disclosed by Hamilton with a reasonable expectation of success to ensure that the material is suitable for the purpose of absorbing liquid.

With regard to the limitation "the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater", the absorbent structure taught by Suzuki as modified by comprises a spunbond film (first layer Q) with polyurethane foam (second layer P), thus Suzuki teaches substantially identical materials for the instant single layer absorbent structure. The property of fluid Intake Rate is considered herein to be an inherent property of the materials used. Therefore, although neither Suzuki nor Hamilton explicitly discloses a fluid intake range, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by

Hamilton so as to possess a fluid intake rate within the claimed range with a reasonable expectation of success. Only the second layer comprising polyurethane foam is elastomeric.

With respect to **claims 44,45**: As seen in Fig. 10 of Suzuki, the single layer structure is shown prior to expansion, i.e. in a dry state and is considered herein to lie flat in said dry state.

With respect to **claim 46**: Suzuki discloses that second layer P is an absorber layer and comprises cotton, but does not disclose that it comprises polyurethane foam. Hamilton discloses that both cotton and polyurethane foam are materials known to be used in absorbent articles. ('424, Col. 27, line 60 – Col. 28, line 8) Therefore it would be obvious to one of ordinary skill in the art to modify the article of Suzuki such that second layer P comprises polyurethane foam as disclosed by Hamilton with a reasonable expectation of success to ensure that the material is suitable for the purpose of absorbing liquid.

10. Claims 27 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al ('381) in view of Hamilton et al ('424) as applied to claim 17 above, and further in view of Carlucci et al ('915).

With respect to **claim 27**: Suzuki does not teach that at least one of the first and second surfaces comprises at least one slit to control shaping. Hamilton also does not disclose a slit. Carlucci teaches a first surface that comprises apertures but does not explicitly teach that at least one of the first and second surfaces comprises at least one slit. However, since Carlucci teaches that the apertures may have non-circular shapes and have various dimensions, it would

be obvious to one of ordinary skill in the art to modify the structure of Suzuki as modified by Hamilton so as to have apertures in the form of at least one slit with a reasonable expectation of success. The recitation "to control shaping" constitutes functional language that is given little patentable weight herein. (Figs. 4b,c, Col. 9, lines 46-55) The article of Suzuki as modified by Hamilton and as further modified by Carlucci meets all of the limitations of claim 27 and thus comprises at least one slit that is fully capable of controlling shaping.

With respect to **claim 37**: Suzuki does not teach that the first surface is treated by any of the processes set forth in claim 27. Hamilton also does not disclose any of the recited treatment processes. Carlucci teaches a single layer absorbent structure having a first surface that expands less than the second surface due to aperturing. Since the article of Carlucci seeks to solve a similar problem in the art with which applicant is concerned, it would be obvious to one of ordinary skill in the art to modify the article of Suzuki as modified by Hamilton such that the first surface expands less than the second surface via treatment comprising aperturing as taught by Carlucci with a reasonable expectation of success.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELANIE J. HAND whose telephone number is (571)272-6464. The examiner can normally be reached on Mon-Thurs 8:00-5:30, alternate Fridays 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tatyana Zalukaeva can be reached on 571-272-1115. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Melanie J Hand/
Primary Examiner, Art Unit 3761